

WHAT IS CLAIMED IS:

1. A method of setting up a multi-user communication session over a global computer network, comprising:

5 sending a session participation request message from a first user to a second user, the session participation request message including the first user's QoS requirements for the session;

10 receiving a negotiating message from the second user by the first user in response to the session participation request message, the negotiation message including the second user's QoS requirements for the session responsive to the first user's QoS requirements;

determining resource availability in access networks of the first and second users according to the second user's QoS requirements;

15 reserving resources in the respective access networks of the first and second users in response to resources being available to achieve the second user's QoS requirements; and

sending an acknowledgement message from the first user to the second user in response to receiving the negotiating message to indicate the completion of QoS provisioning.

20 2. The method, as set forth in claim 1, wherein sending the session participation request message comprises sending a SIP INVITE message.

25 3. The method, as set forth in claim 1, wherein sending the session participation request message comprises sending an SIP INVITE message, with extended SDP specifying QoS requirements and security requirements.

4. The method, as set forth in claim 1, wherein sending the session participation request message comprises sending an SIP INVITE message with extended SDP specifying a latency requirement.

5. The method, as set forth in claim 1, wherein sending a negotiating message from the second user to the first user comprises sending a SIP OK message including a modification of the first user's QoS requirements.

5 6. The method, as set forth in claim 1, wherein sending a negotiating message from the second user to the first user comprises sending a SIP OK message including the second user's QoS requirements being the same as the first user's QoS requirements.

10 7. The method, as set forth in claim 1, wherein sending the session participation request message comprises sending an SIP INVITE message, with extended SDP specifying a session classification indicative of QoS requirements for the communication session.

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8. A method of setting up an e-gaming session played over a global computer network, comprising:

5 sending a session participation request message from a first player to a second player via a first game server, the session participation request message including the first player's QoS requirements for the session;

receiving a negotiating message from the second player via a second game server by the first player in response to the session participation request message, the negotiation message including the second player's QoS requirements for the session responsive to the first player's QoS requirements;

10 determining resource availability in the first player's access network according to the second player's QoS requirements and reserving resources in the first player's access network in response to resources being available to achieve the second player's QoS requirements; and

15 sending an acknowledgement message from the first player directly to the second player in response to receiving the negotiating message to indicate the completion of QoS provisioning.

9. The method, as set forth in claim 8, further comprising:

20 determining resource availability in the second player's access network according to the second player's QoS requirements; and

reserving resources in the second player's access network in response to resources being available to achieve the second player's QoS requirements.

25 10. The method, as set forth in claim 8, wherein sending the session participation request message comprises sending a SIP INVITE message.

11. The method, as set forth in claim 8, wherein sending the session participation request message comprises sending an SIP INVITE message with extended SDP specifying QoS requirements and security requirements.

12. The method, as set forth in claim 8, wherein sending the session participation request message comprises sending an SIP INVITE message with extended SDP specifying a game format type, a latency requirement, and a game classification.

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13. The method, as set forth in claim 8, wherein sending a negotiating message from the second player to the first player comprises sending a SIP OK message including a modification of the first player's QoS requirements.

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14. The method, as set forth in claim 8, wherein sending a negotiating message from the second player to the first player comprises sending a SIP OK message including the second player's QoS requirements being the same as the first player's QoS requirements.

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15. The method, as set forth in claim 8, wherein sending the session participation request message comprises sending an extended SIP INVITE message specifying a game classification indicative of QoS requirements for the e-gaming session.

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16. The method, as set forth in claim 8, further comprising:
determining an address of a second game server which the second user is logged on;
sending the session participation request message from the first player to the second player via the first and second game servers; and
25 sending the negotiating message from the second player to the first player also via the first and second game servers.

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17. The method, as set forth in claim 8, further comprising preparing billing records in response to the reserved resources and QoS requirements for the session.

18. A multi-user communication system over a global computer network, comprising:

a first server onto which a first user is logged;

a first policy server in communication with the first server;

5 a second server onto which a second user is logged;

a second policy server in communication with the second server;

the first user sending a session participation request message to the second user via the first and second servers, the session participation request message including the first user's QoS requirements for the session;

10 the second user sending a negotiating message to the second server user in response to receiving the session participation request message, the negotiation message including the second user's QoS requirements for the session responsive to the first user's QoS requirements;

15 the second policy server determining resource availability in the second player's access network according to the second user's QoS requirements and reserving resources in the second user's access network in response to resources being available to achieve the second user's QoS requirements;

forwarding the negotiating message from the second server to the first server;

20 the first policy server determining resource availability in the first user's access network according to the second user's QoS requirements and reserving resources in the first user's access network in response to resources being available to achieve the second user's QoS requirements;

forwarding the negotiating message from the first server to the first user; and

25 sending an acknowledgement message directly from the first user to the second user in response to receiving the negotiating message to indicate the completion of QoS provisioning.

19. The system, as set forth in claim 18, wherein sending the session participation request message comprises sending a SIP INVITE message.

20. The system, as set forth in claim 18, wherein sending the session participation request message comprises sending an SIP INVITE message with extended SDP specifying QoS requirements and security requirements.

5 21. The system, as set forth in claim 18, wherein sending the session participation request message comprises sending an SIP INVITE message with extended SDP specifying a latency requirement.

22. The system, as set forth in claim 18, wherein sending a negotiating
10 message from the second user to the first user comprises sending a SIP OK message
including a modification of the first user's QoS requirements.

15 23. The system, as set forth in claim 18, wherein sending a negotiating message from the second user to the first user comprises sending a SIP OK message including the second user's QoS requirements being the same as the first user's QoS requirements.

24. The system, as set forth in claim 18, wherein sending the session participation request message comprises sending an SIP INVITE message with extended SDP specifying a session classification indicative of QoS requirements for the communication session.

25. The system, as set forth in claim 18, wherein sending the acknowledgement message comprises sending an SIP ACK message.

26. A local communication system, comprising:

means for receiving logging in information from a user local to the local communication system;

5 means for receiving a request for a communication session with a second user from the first user;

means for sending a session participation request message to a second local communication system associated with the second user, the session participation request message including the first user's QoS requirements for the communication session;

10 means for receiving a negotiation message from the second local communication system, the negotiation message including the second user's QoS requirements for the communication session responsive to the first user's QoS requirements;

15 means for determining resource availability in access network of the first user according to the second user's QoS requirements and reserving resources in the first user's access network; and

means for sending an acknowledgement message directly from the first user to the second user in response to receiving the negotiation message.

20 27. The system, as set forth in claim 26, wherein the means for sending the session participation request message comprises means for sending a SIP INVITE message.

25 28. The system, as set forth in claim 26, wherein the means for sending the session participation request message comprises means for sending an SIP INVITE message with extended SDP specifying QoS requirements and security requirements.

30 29. The system, as set forth in claim 26, wherein the means for sending the session participation request message comprises means for sending an SIP INVITE message with extended SDP specifying a latency requirement.

30. The system, as set forth in claim 26, wherein the means for receiving a negotiating message from the second local communication system comprises means for sending a SIP OK message including a modification of the first user's QoS requirements.

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31. The system, as set forth in claim 26, wherein the means for receiving a negotiating message comprises means for sending a SIP OK message including the second user's QoS requirements being the same as the first user's QoS requirements.

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32. The system, as set forth in claim 26, wherein the means for sending the session participation request message comprises means for sending an SIP INVITE message with extended SDP specifying a session classification indicative of QoS requirements for the communication session.

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33. The system, as set forth in claim 26, wherein means for sending the acknowledgement message comprises means for sending an SIP ACK message.

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34. A computer-enabled method for a multi-user communication session over a global computer network, comprising:

allowing a first user to log-in at a web site stored at a first local server;
receiving, from the first user, an identification of a second user for the communication session;

5 sending a first message to the second user via a second local server, the first message including the first user's QoS requirements for the communication session;

receiving a second message from the second user via the second local server in response to the first message, the second message including the second user's QoS requirements for the session responsive to the first user's QoS requirements;

10 determining resource availability in access networks of the first user according to the second user's QoS requirements;

reserving resources in an access network of the first user in response to resources being available to achieve the second user's QoS requirements; and

15 sending a third message directly to the second user in response to receiving the second message to indicate the completion of QoS provisioning.

35. The method, as set forth in claim 34, wherein sending the first message comprises sending an SIP INVITE message with extended SDP specifying QoS requirements and security requirements.

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36. The method, as set forth in claim 34, wherein sending the first message comprises sending an SIP INVITE message with extended SDP specifying a latency requirement.

37. The method, as set forth in claim 34, wherein receiving a second message comprises receiving a SIP OK message including a modification of the first user's QoS requirements.

38. A computer-enabled method for a multi-user communication session over a global computer network, comprising:

allowing a first user to log-in at a web site stored at a first local server;
receiving a first message from the user via the first local server and a second local server, the first message including the first user's QoS requirements for the communication session;

sending a second message to the first user via the second local server and the first local server in response to the first message, the second message including the second user's QoS requirements for the session responsive to the first user's QoS requirements;

determining resource availability in access networks of the second user according to the first user's QoS requirements;

reserving resources in an access network of the second user in response to resources being available to achieve the second user's QoS requirements; and

receiving a third message directly from the first user in response to receiving the second message to indicate the completion of QoS provisioning.

39. The method, as set forth in claim 38, wherein receiving the first message comprises receiving an SIP INVITE message with extended SDP specifying QoS requirements and security requirements.

40. The method, as set forth in claim 38, wherein receiving the first message comprises receiving an SIP INVITE message with extended SDP specifying a latency requirement.

41. The method, as set forth in claim 38, wherein sending a second message comprises sending a SIP OK message including a modification of the first user's QoS requirements.